IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/776,657
Applicant	:	Shubh D. Sharma, et al.
Filed	:	February 10, 2004
Patent No.	:	7,189,755 B2
Issued	:	March 13, 2007
Title	:	Pyrrolidine Melanocortin-Specific Compounds
Docket No.	:	70025-US04-574
Confirmation No.:		3396

Commissioner for Patents
United States Patent and Trademark Office
PO Box 1450
Alexandria, Virginia 22313–1450

REQUEST FOR CERTIFICATE OF CORRECTION PURSUANT TO 37 CFR § 1.322

Dear Sir:

The undersigned, attorney for applicant, hereby requests the U.S. Patent and Trademark Office, pursuant to 37 C.F.R. §1.322 (a)(1), Certificate of Correction of Office mistake, to issue the attached Certificate of Correction. The claims were amended and restated in an "Amendment and Restriction Election with Traverse" filed on August 16, 2006. A copy of the claims as amended is attached hereto as Exhibit A.

Issued claim 4 corresponds to filed claim 9; issued claim 8 corresponds to claim 19, issued claim 10 corresponds to claim 22, and issued claim 11 corresponds to claim 23. The claims were allowed without amendment by Notice of Allowability mailed on October 19, 2006.

Respectfully submitted,

Date: October 11, 2007

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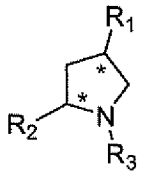
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A compound having the structure:

(I) 

or a stereoisomer or pharmaceutically acceptable salt thereof,

wherein

R_1 is $-L_1-J$;

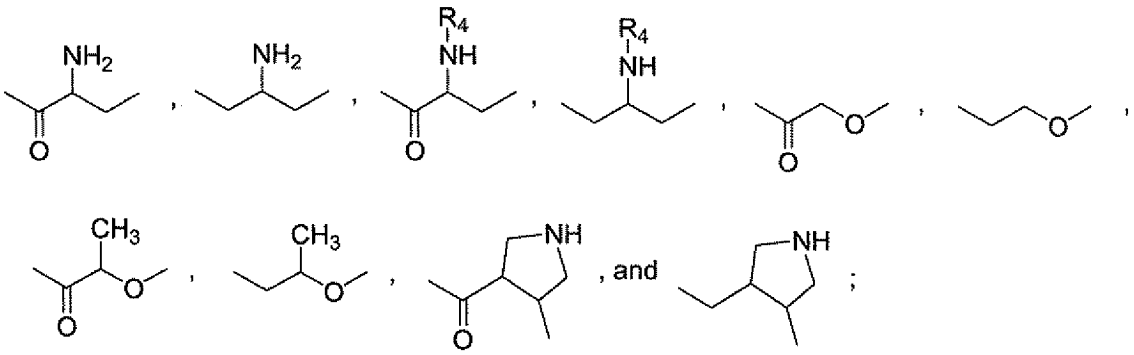
R_2 is selected from the group consisting of -(C=O)-W and -(C=O)-NH-$(CH_2)_y$-W;

R_3 is $-L_2-Q$;

L_1 is a linker selected from the group consisting of $-(CH_2)_y-$, $-O-(CH_2)_y-$, -O-, $-NH-(CH_2)_y-$, $-(C=O)(CH_2)_y-$, $-(C=O)-O-(CH_2)_y-$, $-CH_2(C=O)NH-$, and $-(C=O)-NH-(CH_2)_y-$;

J is a ring structure selected from the group consisting of substituted or unsubstituted aromatic carbocyclic rings, substituted or unsubstituted non-aromatic carbocyclic rings, substituted or unsubstituted aromatic fused carbobicyclic ring groups, substituted or unsubstituted aromatic carbocyclic ring groups wherein the rings are joined by a bond or -O-, and substituted or unsubstituted aromatic fused heterobicyclic ring groups; wherein in each instance the rings comprise 5 or 6 ring atoms;

W is a heteroatom unit with at least one cationic center, hydrogen bond donor or hydrogen bond acceptor wherein at least one atom is N;



L_2 is a linker selected from the group consisting of

Q is an aromatic carbocyclic ring selected from the group consisting of phenyl, substituted phenyl, naphthyl and substituted naphthyl;

R_4 is $-R_5$ or $-R_5-R_6$;

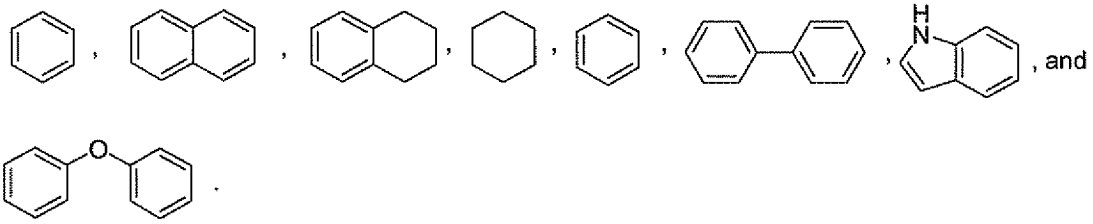
R_5 is from one to three amino acid residues or an amine capping group, provided that if R_6 is present, R_5 is at least one amino acid residue;

R_6 is H or an amine capping group; and

y is at each occurrence independently from 0 to 6;

wherein the carbon atoms marked with an asterisk can have any stereochemical configuration.

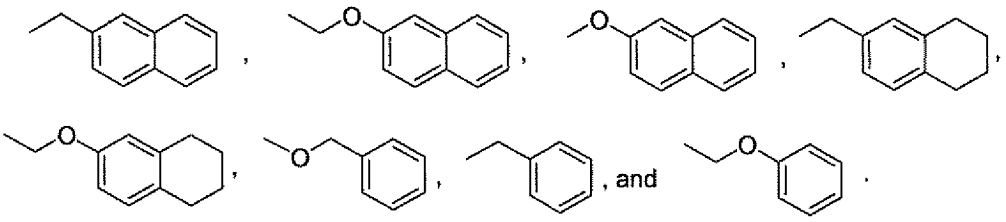
2. (Currently Amended) The compound of ~~claim 1~~ claim 21 wherein J is a



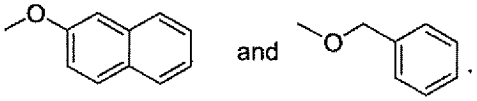
substituted or unsubstituted ring structure selected from the group consisting of

3. (Currently Amended) The compound of ~~claim 1~~ claim 21 wherein at least one ring comprising J is functionalized with one or more halogen, alkyl or aryl groups.

4. (Withdrawn) The compound of claim 1 wherein R_1 is selected from the group consisting of

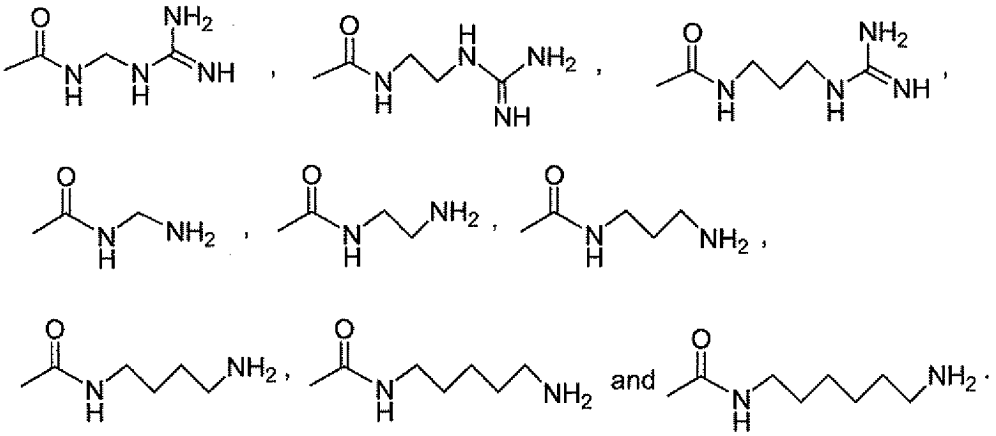


5. (Withdrawn) The compound of claim 4 wherein R_1 is selected from the group consisting of



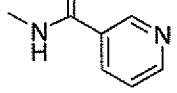
6. (Withdrawn) The compound of claim 1 wherein R_2 is -(C=O)-NH-$(CH_2)_y$-W.

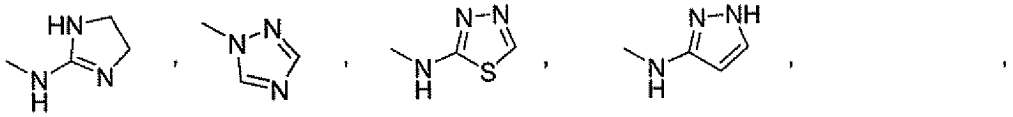
7. (Withdrawn) The compound of claim 6 wherein R_2 is selected from the group consisting of

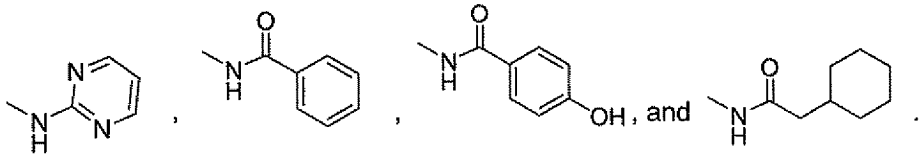


8. (Withdrawn) The compound of claim 1 wherein W is a cationic center selected from the group consisting of NH_2 and $NH(C=NH)NH_2$.

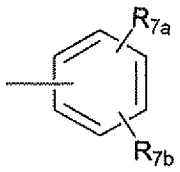
9. (Currently Amended) The compound of ~~claim 1~~ claim 21 wherein W is selected from the group consisting of NH_2, $NH(C=NH)NH_2$, $-NHCOCH_3$, $-CONHCH_3$, -NH(C=NH)NHMe, -NH(C=NH)NHEt, -NH(C=NH)NHPr, -NH(C=NH)NHPr-I, $-NH(C=NH)NH_2$, $-NH(C=O)OCH_3$, $NH(C=O)CH_3$, $NH(C=O)NH_2$, $-NH(C=O)NHCH_3$,







10. (Currently Amended) The compound of ~~claim 1~~ claim 21 where Q is



wherein R_{7a} and R_{7b} are optional ring substituents, and when one or both are present, are the same or different and independently hydroxyl, halogen, alkyl, or aryl groups attached directly or through an ether linkage.

11. (Original) The compound of claim 10 wherein the alkyl group is $-CH_3$ or $-OCH_3$.

12. (Currently Amended) The compound of ~~claim 1~~ claim 21 wherein R_5 or R_6 is an amine capping group selected from the group consisting of hexyl, hexanoyl, heptanoyl, acetyl,

phenylacetyl, cyclohexylacetyl, propylpentanoyl, naphthylacetyl, cinnamoyl, benzyl, benzoyl, benzyloxycarbonyl, cinnamoyl, 12-Ado, 7'-amino heptanoyl, 6-Ahx, Amc and 8-Aoc.

13. (Withdrawn) The compound of claim 1 wherein R_3 is a D-amino acid with an aromatic carbocyclic ring selected from the group consisting of phenyl, substituted phenyl, naphthyl and substituted naphthyl.

14. (Withdrawn) The compound of claim 1 wherein R_3 is a D-amino acid with an amine capping group and an aromatic carbocyclic ring selected from the group consisting of phenyl, substituted phenyl, naphthyl and substituted naphthyl.

15. (Withdrawn) The compound of claim 1 wherein R_3 is from two to four amino acid residues including a D-amino acid with an aromatic carbocyclic ring selected from the group consisting of phenyl, substituted phenyl, naphthyl and substituted naphthyl wherein the D-amino acid is bonded to the ring nitrogen.

16. (Withdrawn) The compound of claim 1 wherein R_3 is from two to four amino acid residues including a D-amino acid with an aromatic carbocyclic ring selected from the group consisting of phenyl, substituted phenyl, naphthyl and substituted naphthyl and bonded to the ring nitrogen and wherein the N-terminus amino acid residue has an amine capping group.

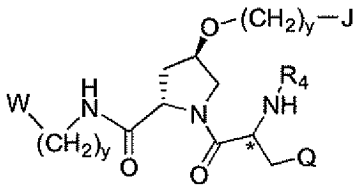
17. (Withdrawn) The compound of claim 1 wherein R_3 comprises a D-amino acid is selected from the group consisting of Phe, Phe(2-Cl), Phe(4-Cl), Phe(2,4-diCl), Phe(2,4-diF), Phe(3,4-diCl), Phe(4-NO_2), Phe(4-Me), Phe(4-Phenyl), HPhe, pF-Phe, Phe(4-Br), Phe(4-CF_3), Phe(3,4-diF), Phe(4-I), Phe(2-Cl, 4-Me), Phe(2-Me, 4-Cl), Phe(2-F, 4-Cl), Phe(2,4-diMe), Phe(2-Cl, 4-CF_3), and Phe(3,4-di-OMe).

18. (Withdrawn) The compound of claim 1 wherein R_3 comprises a D-amino acid is selected from the group consisting of Pgl, Trp, Nal 1, Nal 2, Bip, Dip, Bpa, Ser(Bzl), Ser(2-Naphthyl), Ser(Phenyl), Ser(4-Cl-Phenyl), Ser(2-Cl-Phenyl), Ser(p-Cl-Phenyl), Lys(Z), Lys(Z-2'Br), Lys(Bz), Thr(Bzl), Tic, Tiq, Cys(Bzl), Tyr(2,6-DiCl-Bzl) and Tyr(Bzl).

19. (Currently Amended) The compound ~~of claim 1 wherein R_5 is~~ claim 21 wherein R_4 comprises from one to three amino acid residues selected from the group of L-amino acids consisting of Abu, 2-Abz, 3-Abz, 4-Abz, 1-Ach, Acp, Aib, Ala, Amb, Arg(Tos), Asp(anilino), Asp(3-Cl-anilino), Asp(3,5-diCl-anilino), 11-Aun, AVA, Beta-hHyp(Bzl), Cha, Chg, Cmpi, Disc, Dpr(beta-Ala), GAA, GBzA, B-Gpa, GVA(Cl), His, hSer, Ser(Bzl), Tic, hHyp, Hyp(Bzl), Inp, 2-Naphthylacetyl, Nle, (Nlys)Gly, OcHx, Pip, 4-phenylPro, 5-phenylPro, Pyr, Sar, Tle, Tiq, Atc, Igl, Hyp(O-2-Naphthyl), Hyp(O-Phenyl), 2-Aic, Idc, 1-Aic, Beta-homoSer(Bzl), Ser(O-2-Naphthyl), Ser(O-Phenyl), Ser(O-4-Cl-Phenyl), Ser(O-2-Cl-Phenyl), Thr(Bzl), Tic, Beta-homoThr(Bzl), Thr(O-2-Naphthyl), Thr(O-Phenyl), Thr(O-4-Cl-Phenyl), *allo*Thr, Thr(O-2-Cl-Phenyl) ~~and Thr(O-2-Cl-Phenyl)~~, Tyr, Leu, Ile, Val and Beta-Ala.

20. (Currently Amended) The compound of ~~claim 1 wherein R_3~~ claim 21 wherein R_4 comprises an amine capping group selected from the group consisting of hexyl, hexanoyl, heptanoyl, acetyl, phenylacetyl, cyclohexylacetyl, propylpentanoyl, naphthylacetyl, cinnamoyl, benzyl, benzoyl, benzyloxycarbonyl, cinnamoyl, 12-Ado, 7'-amino heptanoyl, 6-Ahx, Amc and 8-Aoc.

21. (Currently Amended) ~~The compound of claim 1~~ A compound having the structure:

(II) 

or a stereoisomer or pharmaceutically acceptable salt thereof, wherein ~~y, J, W, Q, R_4, R_5 and R_6 are as defined, and~~

J is a ring structure selected from the group consisting of substituted or unsubstituted aromatic carbocyclic rings, substituted or unsubstituted non-aromatic carbocyclic rings, substituted or unsubstituted aromatic fused carbobicyclic ring groups, substituted or unsubstituted aromatic carbocyclic ring groups wherein the rings are joined by a bond or -O-, and substituted or unsubstituted aromatic fused heterobicyclic ring groups; wherein in each instance the rings comprise 5 or 6 ring atoms;

W is a heteroatom unit with at least one cationic center, hydrogen bond donor or hydrogen bond acceptor wherein at least one atom is N;

Q is an aromatic carbocyclic ring selected from the group consisting of phenyl, substituted phenyl, naphthyl and substituted naphthyl;

R_4 is $-R_5$ or $-R_5-R_6$;

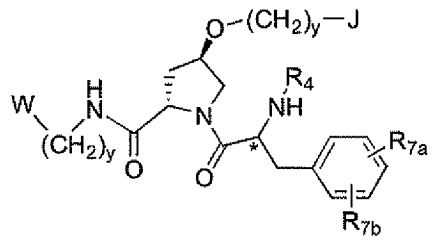
R_5 is from one to three amino acid residues or an amine capping group, provided that if R_6 is present, R_5 is at least one amino acid residue;

R_6 is H or an amine capping group; and

y is at each occurrence independently from 0 to 6;

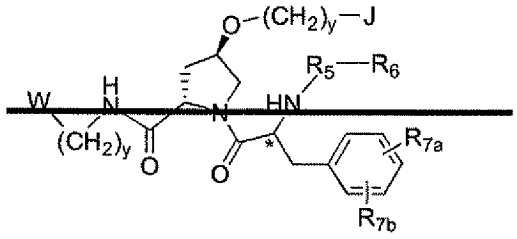
wherein the carbon atom marked with an asterisk can have any stereochemical configuration.

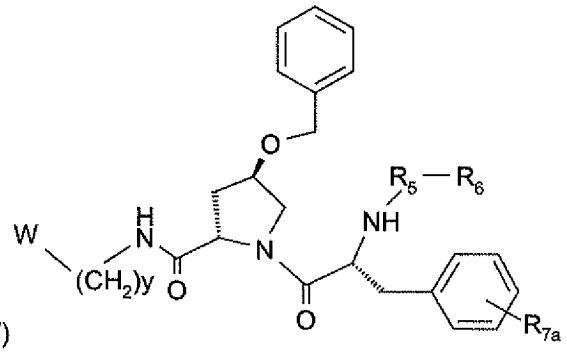
22. (Currently Amended) The compound of claim 21 having the structure:

(III) 

or a stereoisomer or pharmaceutically acceptable salt thereof, wherein ~~y, J, W, Q, R_4, R_5~~ y, J, W, R_4, R_5 and R_6 are as defined, R_{7a} and R_{7b} are optional ring substituents, and when one or both are present, are the same or different and independently hydroxyl, halogen, alkyl, or aryl groups attached directly or through an ether linkage, and the carbon atom marked with an asterisk can have any stereochemical configuration.

23. (Currently Amended) The compound of claim 22 having the structure:

~~(IV)~~ 

(V) 

or a stereoisomer or pharmaceutically acceptable salt thereof, wherein ~~y, J, W, [[Q,]] R_5, R_6, R_{7a} and R_{7b} are as defined, and the carbon atom marked with an asterisk can have any~~

~~stereochemical configuration~~

W is NH_2 or $NH(C=NH)NH_2$;

y is from 1 to 6;

R_5 is from one to three amino acid residues selected from the group consisting of L- or D-isomers of Abu, 2-Abz, 3-Abz, 4-Abz, 1-Ach, Acp, Aib, Ala, Amb, Arg(Tos), Asp(anilino), Asp(3-Cl-anilino), Asp(3,5-diCl-anilino), 11-Aun, AVA, Beta-hHyp(Bzl), Bip, Cha, Chg, Cmpi, Dip, Disc, Dpr(beta-Ala), GAA, GBzA, B-Gpa, GVA(Cl), His, hSer, Ser(Bzl), Tic, hHyp, Hyp(Bzl), Inp, Nal 1, Nal 2, 2-Naphthylacetyl, Nle, (Nlys)Gly, OcHx, Pip, 4-phenylPro, 5-phenylPro, Pyr, Sar, Tle, Tiq, Atc, Igl, Hyp(O-2-Naphthyl), Hyp(O-Phenyl), 2-Aic, Idc, 1-Aic, Pro, Beta-homoSer(Bzl), Ser(O-2-Naphthyl), Ser(O-Phenyl), Ser(O-4-Cl-Phenyl), Ser(O-2-Cl-Phenyl), Thr(Bzl), Tic, Beta-homoThr(Bzl), Thr(O-2-Naphthyl), Thr(O-Phenyl), Thr(O-4-Cl-Phenyl), *allo*Thr, Thr(O-2-Cl-Phenyl), Tyr, Leu, Ile, Val and Beta-Ala;

R_6 is H or an amine capping group selected from the group consisting of acetyl, hexyl, hexanoyl, heptanoyl, acetyl, phenylacetyl, cyclohexylacetyl, propylpentanoyl, naphthylacetyl, cinnamoyl, benzyl, benzoyl, benzyloxycarbonyl, cinnamoyl, 12-Ado, 7'-amino heptanoyl, 6-Ahx, Amc and 8-Aoc;

R_{7a} is optionally present, and if present, is halogen.

24. (Original) A composition comprising a compound of any of the foregoing structures in combination with a pharmaceutically acceptable carrier.

25. (Withdrawn) A method for altering a disorder or condition associated with the activity of a melanocortin receptor, comprising administering to a patient a therapeutically effective amount of the composition of claim 24.

26. (Withdrawn) The method of claim 24 wherein the disorder or condition is associated with the activity of a melanocortin-1 receptor.

27. (Withdrawn) The method of claim 26 wherein the disorder or condition is an inflammatory disorder.

28. (Withdrawn) The method of claim 25 wherein the disorder or condition is an eating disorder.

29. (Withdrawn) The method of claim 25 wherein the disorder or condition is sexual dysfunction.

PTO/SB/44 (09-07)
Approved for use through 08/31/2010. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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(Also Form PTO-1050)

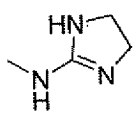
UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,189,755 B2
APPLICATION NO.: 10/776,657
ISSUE DATE : March 13, 2007
INVENTOR(S) : Sharma et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 50 – Col. 51, Claim 4, delete the entire claim and replace with the following:

-- 4. The compound of claim 1 wherein W is selected from the group consisting of NH_2, $NH(C=NH)NH_2$, $-NHCOCH_3$, $-CONHCH_3$, $-NH(C=NH)NHMe$, $-NH(C=NH)NHEt$, $-NH(C=NH)NHPr$, $-NH(C=NH)NHPr$-I, $-NH(C=NH)NH_2$, $-NH(C=O)OCH_3$, $-NH(C=O)CH_3$, $NH(C=O)NH_2$, $-NH(C=O)NHCH_3$,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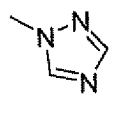
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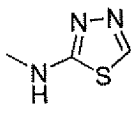
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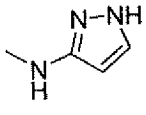
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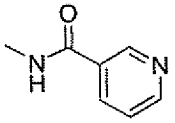
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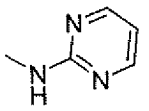
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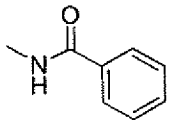
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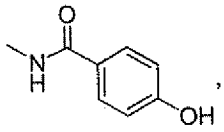
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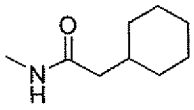
. --

Col. 50, Claim 8, line 15, delete "4-Cl-Phenyl) allo Thr, Thr(O-2-Cl-Phenyl), Try, Leu," and replace with -- 4-Cl-Phenyl), *allo*Thr, Thr(O-2-Cl-Phenyl), Tyr, Leu, --.

Col. 52, Claim 10, line 6, delete "same o" and replace with -- same or --.

Col. 52, Claim 11, line 8, delete "grour" and replace with -- group --.

MAILING ADDRESS OF SENDER (Please do not use customer number below):
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